



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION IX**  
**75 Hawthorne Street**  
**San Francisco, CA 94105**

December 16, 2005

In Reply Refer To: WTR-7

Dave Rodriguez, Director  
Environmental Support Department  
Marine Corp Air Station Yuma  
P.O. Box 99110  
Yuma, Arizona 83569-9110

**Re: July 22, 2005 Clean Water Act Inspection**

Dear Mr. Rodriguez:

Enclosed is the December 9, 2005 report for our July 22 inspection of the Marine Corp Air Station Yuma. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, the Arizona DEQ, and the City of Yuma, by **January 30, 2006**.

The main findings are summarized below:

- 1 Yuma MCAS discharges far less non-domestic wastewaters to the sewers than in the past. Exemplary source control strategies in effect have now allowed Yuma MCAS to manage wastewater like hazardous materials with curtailed generation through best management practices, satellite collection stations, and few points of disposal to the sewers.
- 2 Federal standards apply to the treated discharges from only two wash racks and two non-destructive testing stations. The Yuma permit incorrectly applied the Federal standards to combined overall base flows, instead of to these individual discharges.
- 3 Compliance with Federal standards and local limits is expected given the discharge strengths and types and the extent of treatment on-site. There is no evidence of any non-domestic discharge from Yuma MCAS adversely affecting the Yuma sewerage works.

I certainly appreciate your helpfulness extended to me during this inspection. I remain available to the City of Yuma and to you to assist in any way. Once again, thank you for your cooperation during this inspection. Please do not hesitate to call me at (415) 972-3504 or e-mail at [arthur.greg@epa.gov](mailto:arthur.greg@epa.gov).

Sincerely,

*Original signed by:*  
*Greg V. Arthur*

Greg V. Arthur  
CWA Compliance Office

Enclosure

cc: Susana Hitchcock, Yuma  
Cliff DeVlieg, ADEQ



**U.S. ENVIRONMENTAL PROTECTION AGENCY**

**REGION 9**

**CLEAN WATER ACT COMPLIANCE OFFICE**

**NPDES COMPLIANCE EVALUATION INSPECTION REPORT**

Industrial User: Marine Corp Air Station Yuma  
Yuma, Arizona 85369-9110  
40 CFR 433 Subpart A – Metal Finishing

Treatment Works: City of Yuma  
Desert Dunes Water Reclamation Facility  
(Arizona Aquifer Protection Permit P-105005)

Pretreatment Program City of Yuma  
(NPDES Permit AZ0020443)

Date of Inspection: July 22, 2005

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Inspection Participants:

US EPA: Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504

Arizona DEQ: Cliff DeVlieg, Envr. Protection Specialist, (602) 771-4688

City of Yuma: Susana Hitchcock, WQ Assurance Supervisor, (928) 373-4536  
Kathleen Carroll, Treatment Superintendent, (928) 373-4500  
Larry Brown, Inspector  
Kim Balbini, Inspector

Yuma MCAS: COL B.D. Hancock, Commanding Officer  
Dave Rodriguez, Envr Support Division Director, (928) 269-3161  
Jon Buehler, Envr Support Dept, Water Quality, (928) 269-3460  
Bill Shepherd, Envr Support Dept, Drinking Water  
John McPherson, Maytag Aircraft, Tank Farm Chief

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Report Prepared By: Greg V. Arthur, Environmental Engineer  
December 16, 2005

## 1.0 Scope and Purpose

On July 22, 2005, EPA, the Arizona Department of Environmental Quality ("ADEQ"), and the City of Yuma conducted a compliance evaluation inspection of the Marine Corp Air Station Yuma ("Yuma MCAS") in Yuma, Arizona. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Yuma MCAS is a significant industrial user (“SIU”) within the Yuma sewer service area whose compliance was assessed as part of a 2005 evaluation of the Yuma pretreatment program by EPA and its contractor, Tetra Tech, and EPA. The inspection participants are listed on the title page. Arthur conducted the inspection on July 22.

### 1.1 Process Description

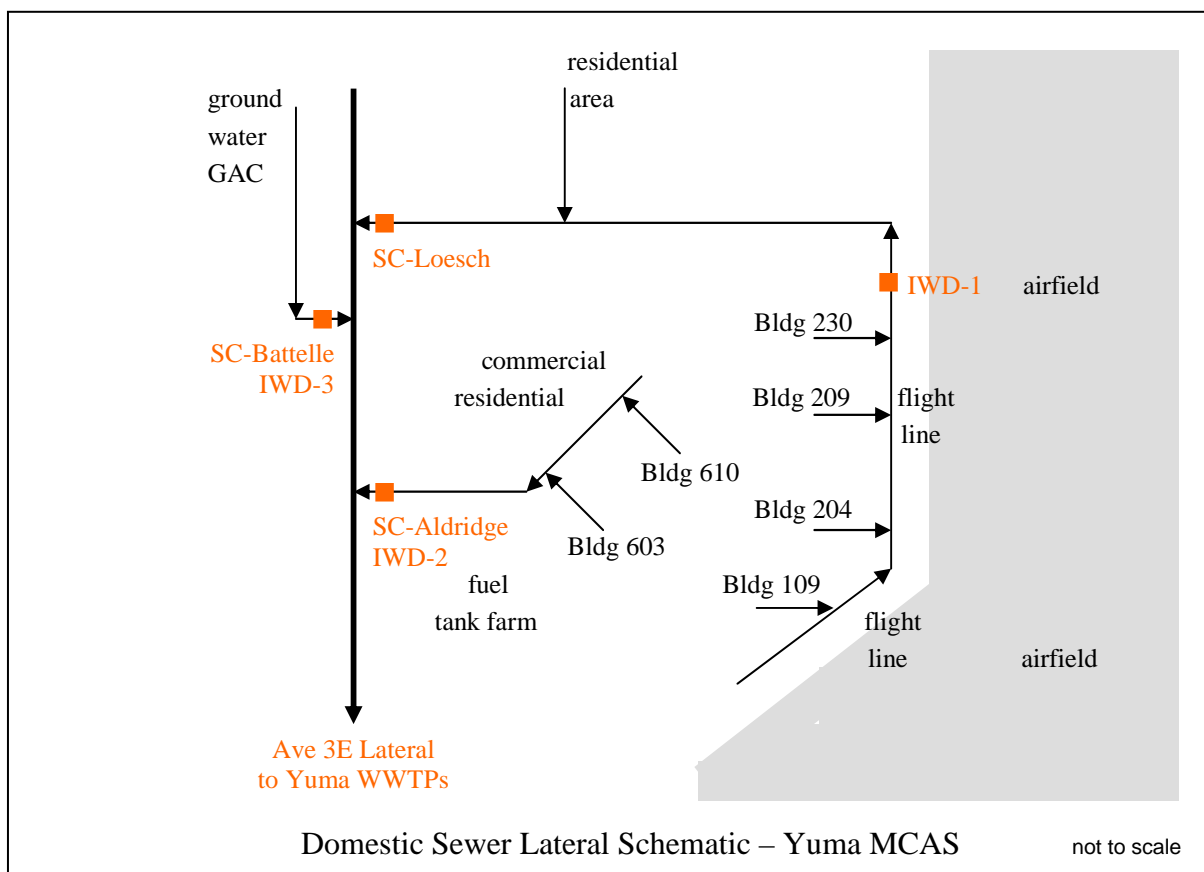
Yuma MCAS is a military air base, operated by the Base Air Station, that hosts as its main tenants, the Marine Air Group 13 (MAG-13), the Marine Aviation Logistics Group 13 (MAL-13), and Marine Fighter Training Squadron 401 (VMFT-401). The operations were unaffected by the base realignment process. Yuma MCAS consists of an airfield, buildings servicing the flight line, a fuel tank farm, commercial buildings, and residential housing.

Selected Flight Line Bldgs	<ul style="list-style-type: none"> <li>• Bldg 97 – MAG-13 hanger</li> <li>• Bldg 101 – MAG-13 hanger</li> <li>• Bldg 103 – MAG-13 hanger</li> </ul>
	<ul style="list-style-type: none"> <li>• Bldg 109 – MAG-13 hanger (with outside wash rack)</li> <li>• Bldg 146 – VMFT-401 hanger</li> <li>• Bldg 149 – fire department / fire training unit</li> <li>• Bldg 204 – VMFT-401 F-5 maintenance</li> <li>• Bldg 209 – outside wash racks</li> <li>• Bldg 215 – parachute maintenance</li> <li>• Bldg 220 – empty maintenance hanger</li> <li>• Bldg 224 – air station maintenance</li> </ul>
highlight designates EPA walk-through	<ul style="list-style-type: none"> <li>• Bldg 227 – search and rescue hanger (with parts alodining)</li> <li>• Bldg 229 – Harrier engine maintenance</li> <li>• Bldg 230 – airframes (paint shop, x-ray NDT, paint strip)</li> <li>• Bldg 234 – yellow gear maintenance</li> <li>• Bldg 328 – base supply</li> <li>• Bldg 329 – hazardous materials storage</li> </ul>
	<ul style="list-style-type: none"> <li>• Bldg 603 – motor pool maintenance (with outside wash racks)</li> <li>• Bldg 610 – military motor maintenance (with an outside wash rack)</li> </ul>

<p>Other Selected Base Installations</p> <p>highlight designates EPA walk-through</p>	<ul style="list-style-type: none"> <li>• Bldg 310 – engine test cell (with oil/water separation)</li> <li>• Bldg 564 – auto hobby shop (pumper trucked to Bldg 603)</li> <li>• Bldg 567 – coin-operated car wash</li> <li>• Bldg 888 – facilities maintenance</li> <li>• Bldg 1955 – Base water supply treatment plant</li> <li>• Fuel Tank Farm (Tanks 41/42 owned by Kinder-Morgan Oil)</li> <li>• Ground Water Remediation</li> </ul>
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The Yuma MCAS personnel identified the selected installations as the principal sources of wastes and non-domestic wastewaters, and specifically identified all other installations as strictly domestic sources. Arthur walked-through the operations identified with wash racks, oil/water separators, and metal finishing, as well as all process-related wastewater sources.

Yuma MCAS discharges its domestic and non-domestic wastewaters to the City of Yuma sewers through three sewer connections designated in this report as SC-Aldridge, SC-Loesch, and SC-Battelle. Yuma has established three sample points aimed at capturing the non-domestic wastewaters through these points, designated as IWD-1, IWD-2, and IWD-3. These sample points and sewer connections are indicated on the schematic below.



## 1.2 Facility SIC Code

Yuma MCAS is assigned the SIC code for national security (SIC 9711).

### 1.3 Facility Wastewater Sources

Yuma MCAS discharges very few non-domestic wastewaters to the city sewers. Since 1992, the Marine Corp has implemented base-wide spill containment and source control strategies that has allowed the elimination of most process-related wastewaters and decommissioning of an oily wastewater collection and treatment system. In its place, the Marine Corp has sealed the concrete flooring in the hangers, support buildings, and maintenance areas and instituted dry-floor best management practices throughout using solid adsorbent and zamboni floor cleaning. The Marine Corp also has redesigned the storm water sewers with all runoff from the fueling areas directed through oil/water separation to a storm water percolation/evaporation basin, and storm water runoff from the flight line captured in blind sumps for evaporation or pump-out. In effect, the Yuma MCAS manages wastewaters like hazardous materials with minimized generation through best management practices, satellite collection stations, and limited points of disposal to the domestic and storm sewers. See Appendix 1.

Process Wastewaters Discharged to Yuma Sewers	Process Wastes Recovered For Off-Site Hauling	Non-Contact / Storm Water To Perc/Evap Basins
<u>SC-Loesch</u> zamboni mop waters Bldg 230 dye penetrant Bldg 230 x-ray developing Bldg 230 work sink drainage Bldg 209 outside wash rack Bldg 204 x-ray developing Bldg 109 outside wash rack <u>SC-Aldridge</u> Bldg 603 outside wash rack Bldg 610 outside wash rack <u>SC-Battelle</u> treated monitoring well water	<u>oily wastes</u> fuel farm o/w sep skim oily container drainage Bldg 229 used fuel/oil Bldg 230 parts washer Bldg 234 spent oils Bldg 209 o/w sep skim Bldg 109 o/w sep skim Bldg 603 o/w sep skim Bldg 610 o/w sep skim <u>hazardous materials</u> Bldg 230 paint strip spends Bldg 230 weld coolant Bldg 230 magnaflux spends Bldg 204 alodine wastes Bldg 204 magnaflux spends <u>residuals</u> evap pond non-haz sludge spent silver recovery spent GAC	<u>Non-contact process</u> WTP backwashes <u>storm water</u> fuel tank farm runoff tarmac runoff

Spills and Floor Cleaning – All of the floors in the airplane hangers and maintenance shops selected for walk-through inspections were observed to be finished with sealed concrete and without floor drains. Drips, spills, oils are wiped-up with disposable towels or swept-up using adsorbent litter. Zamboni machines are used to wet-clean the floors with the resulting mop waters drained to the sewers through the existing Bldgs 109 and 209 outside racks.

Alodining – Yuma MCAS performs alodining, a form of chromium conversion coating, in Bldgs 204, 109, 227 and 237. In Bldg 204, the alodining occurs in a small tank followed by a static rinse within secondary containment. Alodined parts are final wiped clean with the

spent wipes bagged for disposal as hazardous waste. The alodining solution and rinse spents are generated on rare occasions and hauled off-site for disposal as hazardous. Alodining in Bldgs 109, 227, and 237 are limited to the use of alodining pens without rinses.

Outside Wash Racks – Yuma MCAS operates four wash racks each connected to the domestic sewers. The two wash racks operating along the flight line, outside of Bldg 209 and 109, are used to water-jet clean aircraft and yellow (ground) gear with non-emulsifying soap. The Bldg 209 wash rack drains through a below-ground oil/water separator and a holding tank to the domestic sewers. The Bldg 109 wash rack drains through a sand trap and oil/water separator vault which is pumped out to the domestic sewers. There are other wash racks, outside of Bldg 610 and 630 to handle the pressure wash from motor pools. Both motor pool wash racks drain through oil/water separators to the domestic sewers.

Non-Destructive Testing – Yuma MCAS provides non-destructive testing of metal parts in two buildings. The Bldg 230 NDT station generates dye penetrant washdown filtered through a granulated activated carbon canister, magnaflux spents, x-ray film developer rinse, spent film developer fixant treated through silver recovery canisters, and work sink drainage. The Bldg 204 NDT station generates magnaflux spents, x-ray developer rinse, and spent film developer fixant treated through silver recovery canisters. All magnaflux spents are hauled off-site for disposal. Suppliers service and change-out the silver recovery and activated carbon canisters. The remaining NDT waste-waters drain through single connections from Bldg 230 and from Bldg 204 to the sewers.

Oil Waste Recovery – Yuma MCAS provides satellite oily waste collection barrels through the base in the hangers and shops. The oily waste collection barrels are used to collect used fuel, used oil, oil drainage from oil filters and other containers, and specifically the parts washer washdown from the Bldg 230 tire shop. In addition, Yuma MCAS also collects the oily skim removed by the five oil/water separators operated on-site. All recovered oily waste is hauled to used oil storage tanks situated over secondary contain near Bldg 310.

Storm Water Run-off – Yuma MCAS directs storm water run-off that potentially could come into contact with airplanes or support operations to a storm water basin for percolation/evaporation. In particular, the truck fueling pad drains to storm sewer inlets with paper filters, which connect together to discharge through a vault and an oil/water separator to the storm water basin. Yuma MCAS relies on best management practices to keep other paved areas along the flight line clean since they drain to numerous grated dry-wells for collection and evaporation. On the day of this inspection, EPA observed equipment washdown from Bldg 234 draining to a storm water dry-well. This inspection did not involve a review of the Storm Water Pollution Prevention Plan or the Arizona Aquifer Protection Permit.

Hazardous Waste Recovery – In addition to spent alodining solutions and magnaflux spents Yuma MCAS collects paint stripping solvent spents, paint stripping washdown, and weld shop spent coolants from Bldg 230 for disposal as hazardous waste. This inspection did not involve a comprehensive tally of all hazardous wastes generated on-site, but rather was limited to those identified through the determination of process-related wastewater.

Ground Water Remediation – Battelle, a contractor for the Yuma MCAS, collects by pumper truck, the monitoring well water extracted from the underlying ground water remediation site

sampling wells. Battelle discharges the monitoring well water to the sewers after treatment through holding, a bag filter, and granulated activated carbon, to remove TCE, DCE, or other chlorinated solvents. There is no discharge of ground water remediation water to the sewers.

Base Water Treatment Plant – Yuma MCAS draws Colorado River water from a canal through a water treatment plant with a design capacity to produce 4.5 million gallons per day of potable water for the base. The water treatment consists of bar screens, potassium permanganate algae control, flocculant-aided settling, sodium hypochlorite disinfection, down flow sand/antracite media filtration, two 750,000 gallon final clear wells and water supply storage tanks. The settling basins and media filters produce backwashes which are captured in an evaporation pond. There is no discharge from the water treatment plant to the sewer.

#### **1.4 Facility Process Wastewater Composition**

The process-related wastewater discharges to the sewers listed in section 1.3 above would be expected to contain metals, salts, surfactants, suspended solids, and oils.

#### **1.5 Facility Process Wastewater Treatment**

On-site wastewater treatment is limited to five oil/water separators, two silver recovery systems, and two small granulated activated carbon units, since Yuma MCAS generates limited types and amounts of process-related wastewater for discharge to the sewer. The oil/water separators remove free non-emulsified oils and floating solids primarily from wash rack washdown and zamboni mop waters. The silver recovery units remove silver through cementation with steel wool in canisters serviced quarterly by Safety-Kleen. The activated carbon canisters are serviced by West State Carbon and Battelle. Overall process-related wastewater flow rates are difficult to determine since the discharges to the sewers through SC-Loesch and SC-Aldridge consist primarily of domestic sewage. See Appendix 1.

Monitoring Points – EPA has identified seven sample monitoring points for process-related wastewater discharges to the sewers and two others for discharge to evaporation basins. Yuma utilizes two other monitoring points for the overall discharge of non-domestic (both process and non-process) wastewaters to the sewers. The EPA identified sample points are designated in this report by building numbers.

Sewer Discharge Points		Evaporation Basin Points		Yuma Permitted Points	
IWD-230	NDT combined	IWD-310	oil/water sep	IWD-1	overall flight line
IWD-209	oil/water sep	IWD-WS	WTP backwash	IWD-2	Aldridge @ 3E
IWD-204	NDT combined			IWD-3	same as IWD-880
IWD-109	oil/water sep				
IWD-603	oil/water sep				
IWD-610	oil/water sep				
IWD-880	well water treat				

## **1.6 POTW Legal Authorities**

City of Yuma – Yuma operates an EPA-approved pretreatment program as required by the NPDES Permit No. AZ0020443. As part of this, Yuma has established a sewer use ordinance in Chapter 191 of its municipal code that applies to all industrial users of its sewer system. Under this authority, Yuma issued industrial user permit No. 0001 to Yuma MCAS covering the combined domestic and non-domestic sewer discharges from IWD-1 and IWD-2, and industrial user permit No. 0019 covering the sewer discharge from ground water monitoring wells water at IWD-3.

## **1.7 Photo Documentation**

Arthur took no photographs during this inspection.



## **2.0 Sewer Discharge Standards and Limits**

*Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewer discharges from industrial users. (40 CFR 403.5 and 403.6).*

The majority of wastewaters discharged to the sewers are both domestic in nature and combined with non-domestic wastewaters from multiple sources. As a result, the Yuma permit correctly regulates the combined discharges into the Yuma sewers. However, the Yuma permit misapplies the Federal metal finishing standards in 40 CFR 433 for existing sources to the combined discharges and not individually to the few Federally-regulated wastewater discharges. EPA identified just four Federally-regulated waste streams that together contribute only a small fraction of the total discharge to the sewers. The application of Federal categorical standards, national prohibitions, and local limits was determined through visual inspection. See Appendix 2 for the sewer discharge standards and limits.

### ***Requirements***

- The Federal standards for existing source metal finishing must be applied to the individual discharges from the wash racks and NDT stations along the flight line.
- Self-monitoring must include sampling of the combined discharges for local limits and the identified sources for Federal standards, as set forth in section 5 of this report.

### ***Recommendations***

- None.

## **2.1 Classification by Federal Point Source Category**

Yuma MCAS qualifies as an existing source metal finisher subject to the Federal metal finishing standards in 40 CFR 433. However the standards themselves apply only to four identified individual discharges that account for just a small portion of the overall discharges to the sewers. All other flows are domestic in nature, or non-domestic but non-categorical, or no longer directed to the sewers but rather to evaporation basins. Federal standards are self-implementing which means they apply to regulated waste streams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact wastewaters to be dilution waters.

## **2.2 Local Limits and National Prohibitions**

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of

the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national prohibitions apply nationwide to all non-domestic sewer discharges. The Yuma local limits apply to non-domestic discharges in the Yuma service area including Winterhaven and the Quechan Tribal area. The Yuma permit to Yuma MCAS specifically applies the local limits to combined domestic and non-domestic wastewaters at IWD-1, IWD-2 and IWD-3.

### 2.3 *Federal Categorical Pretreatment Standards* *Existing Source Metal Finishing - 40 CFR 433.15*

40 CFR 433.17	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO
daily-maximum (mg/l)	0.69	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13
month-average (mg/l)	0.26	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-

Applicability - Under 40 CFR 433.10(a), the metal finishing standards "... apply to plants that perform ..." the core operations of electroplating, electroless plating, etching, anodizing, chemical coating, or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning, machining, grinding, sand blasting, welding, soldering, solvent degreasing, painting, paint stripping, assembly, calibration, and testing, associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the metal finishing standards apply to discharges from any of the core or associated operations. As a result, since Yuma MCAS performs alodining, a form of the core operation of chemical coating, the metal finishing standards apply to discharges from the wash racks (*cleaning, assembly*) and non-destructive testing stations (*calibration, testing*) through IWD-204, IWD-209, IWD-230, and IWD-109 to the sewers. The do not apply to the discharges from the wash racks for the two motor pool operations through IWD-603 and IWD-610.

Basis of the Standards - The existing source metal finishing standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were set where printed circuit board manufacturers and other metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

Adjustments – No adjustments are necessary to account for multiple Federal categories or unregulated flows. Also under 40 CFR 433.12(c), the cyanide standards default without adjustment when there are no cyanide bearing waste streams.

Compliance Deadline - New sources were required to comply on the first day of discharge.

### 2.4 *Point(s) of Compliance*

Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows from Yuma MCAS. The sample points designated in this report as IWD-1, IWD-2, and IWD-3 are suitable end-of-pipe sample points representative of all non-domestic wastewater discharges from Yuma MCAS. The Federal categorical pretreatment standards apply end-of-process-

after-treatment to all Federally-regulated discharges to the sewers. The Federal standards cannot apply to combined wastewaters when the domestic fraction results in a proportional downward adjustment in the standards below the pollutant detection limits. As a result, at Yuma MCAS the Federal standards can only apply to the undiluted discharges of Federally-regulated wastewaters from the identified sources, IWD-204, IWD-209, IWD-230, and IWD-109. These are the suitable sample points representative of the day-to-day discharge of Federally-regulated wastewaters.

## **2.5    *Compliance Sampling***

Local limits and the national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be supplanted with single grabs or manually-composited grabs that are representative of the sampling day's discharge. Specifically, for IWD-109 and IWD-209, grab samples would be representative of the sampling day's discharge if their discharge flow rates per day are less than the volumes of their oil/water separators.

### **3.0 Compliance with Federal Standards**

*Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).*

*Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).*

*Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).*

The Federal standards only apply to the discharges to the sewers from the wash racks and NDT stations along the flightline. These discharges do not need wastewater treatment equivalent to the model best-available-technology treatment used in originally setting the Federal standards because they do not contain significant concentrations of the Federally-regulated dissolved metals or cyanides. They would be expected to contain low concentrations of metals solids (*aluminum, iron, copper, lead, and to a lesser degree, cadmium, chromium, nickel, and zinc*) worn from the parts and entrained in the oily grime, as well as surfactants from the soap cleaners. However, although compliance with the Federal standards is expected, it cannot be demonstrated at this time because the sample record includes no results for the individual Federally-regulated discharges. The Yuma permit incorrectly required samples to be collected of overall combined discharges to the sewers. See Appendix 2.

#### ***Requirements***

- None.

#### ***Recommendations***

- If sampling show violations of the Federal standards, flocculants and/or de-emulsifiers should be added to increase solids and oil removals in the flight line oil/water separators.

### **3.1 Sampling Results**

The 2003-2005 sample records for Yuma MCAS does not include any sample results for the appropriate sampling points for determination of compliance with the Federal standards.

### **3.2 Best-Available-Technology Treatment**

The waste streams generated by the wash racks and NDT stations on the flight line would not be expected to generate the dissolved metals (with the possible of exception of silver) and cyanides intended for regulation under the Federal metal finishing standards in 40 CFR 433. As a result, consistent compliance with the Federal standards would be expected simply

through oil/water separations and silver recovery even though the level of wastewater treatment is not equivalent to the models used in originally setting the Federal standards.

Wash Racks - The wash rack discharges would be expected to contain low concentrations of metals solids entrained in the oily grime cleaned from the parts and fabrications undergoing repair. That oily grime would be expected to contain metals, lubricants, and finishes removed from the parts through wear. As a result, the wash rack washdown would be expected to entrain some metal particles primarily of aluminum, iron, copper, lead, and to a lesser degree, chromium, cadmium, nickel, and zinc, as well as hydrocarbons, suspended solids, and the surfactants used to clean the parts. If sampling of the wash racks at IWD-109 and IWD-209 results in the violation of any of the Federal standards, the removal efficiency of the oil/water separator would have to be improved. Likely retrofits might include the addition of ferrous coagulations and polymer flocculants to increase the removal of suspended solids and of de-emulsifying agents to increase the removal of hydrocarbons thereby increasing the removal of hydrophobically bound solids.

NDT Stations – The non-destructive testing stations discharges would be expected to contain low levels of silver from the spent x-ray fixant, hydrocarbons, and possibly acidity. Single silver recovery canisters usually are rated to produce effluents of less than 5.0 mg/l or less, however both NDT stations employ dual silver recovery steps so concentration of as low of 1.0 mg/l would be expected. The NDT testing discharges would also be expected to contain almost no hydrocarbons and metals because of the activated carbon canisters in use. The treatment steps coupled with the other non-silver bearing low-strength waste streams from dye penetrant testing and the work sinks should make model best-available-technology treatment unnecessary to consistently comply with Federal standards.

Operational Controls – Yuma MCAS greatly benefits from the implementation of best management practices for source control employed throughout the base. In particular, the hanger and shop floors are now of sealed concrete without floor drains which results in the handling of all spills, leaks, drips, and deposits for waste recovery as if it were solid wastes. The only wastewater stream generated by the principal operations at Yuma MCAS now comes from a periodic mopping of the already dry-method cleaned floors with a zamboni cleaning machine. The zamboni mop waters are all that is now discharged to the sewers and it is done so through one of the flight line two wash racks. All of this restricts the generation of wastewaters through operational practices such as satellite oily waste collection, litter adsorbent cleaning of spills, the wipe down of parts with rags, and the redirection of storm water run-off through a separate oil/water separation away from the sewers to an evaporation basin. In comparison to the EPA inspector's last visit in 1989, Yuma MCAS now has excellent operational control of the wastes generated and thus does not have much to dispose of through discharge to the sewers.

### **3.3 *Dilution as a Substitute for Treatment***

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising BAT model treatment with dilute waste streams. In particular, this prohibition applies when sample results for a diluted waste stream are below

the Federal standards and the apparent compliance is used to justify discharge without treatment. There are two conditions that need to be established in order to make a determination of non-compliance with this prohibition. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be some form of excess water usage within a Federally-regulated process.

Yuma MCAS does not meet the first condition of non-compliance since all Federally-regulated waters do not need model treatment in order to comply with the Federal standards. There is also no evidence that Yuma MCAS meets the second condition either.

### **3.4    *Bypass Provision***

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

For the most part, there cannot be bypassing at Yuma MCAS since the Federally-regulated wastewater do not need model treatment in order to comply with the Federal standards.

#### **4.0 Compliance with Local Limits and National Prohibitions**

*All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).*

*Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).*

The combined discharge of non-domestic wastewaters with domestic, and the oil/water separators, as well as, in particular, the best management practices restricting the generation of non-domestic (especially oily) wastewaters, are expected to continue to result in compliance with the local limits for metals, cyanide, petroleum hydrocarbons, conventional pollutants, and pH, at the permitted sample points.

##### ***Requirements***

- None.

##### ***Recommendations***

- None.

#### **4.1 National Objectives**

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

- (1) cause operational interference with sewage treatment or sludge disposal,
- (2) pass-through sewage treatment into the receiving waters or sludge,
- (3) are in any way incompatible with the sewerage works, or
- (4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Yuma wastewater treatment plants through consistent compliance with their sludge and discharge limits. In the recent past, Yuma MCAS contributed to the Figueroa water pollution control facility. Now, the Yuma MCAS flows are the sole contribution to the Desert Dunes water reclamation plant.

However, this inspection did include a evaluation of the historic cause of violations of the Federal sludge limits for the Figueroa water pollution control facility for lead. Yuma MCAS is not the cause of the violations reported in the sample record. In fact, no sources within the Yuma service area appears capable of producing elevated sludge contents for lead. The cause of the violations appears to be analytical interferences in the sludge testing. Moreover, there have been no instances at the Figueroa water pollution control facility that would qualify as pass-through or interference.

#### **4.2 *Local Limits for Oxygen Demanding Pollutants and The National Prohibition Against Interference***

The wastewaters discharged to the sewers are not high enough in organics strength to pose a risk of interference, with average BOD of 91 at IWD-1 and 217 at IWD-2 essentially equivalent to domestic sewage.

#### **4.3 *Local Limits for Toxic Metals, Cyanide, and Other Pollutants and The National Prohibition Against Pass-Through***

Metals – There was a single violation of the local limits for the metals. One of eight results for copper in the sample record of 1600 µg/l at IWD-2 exceeded the existing local limit for copper of 620 µg/l although the proposed limits are expected to rise up to 3400 µg/l. All other samples in 2003-2005 at both IWD-1 and IWD-2 complied with the current and proposed local limits for beryllium, cadmium, chromium, copper, lead, molybdenum, nickel, selenium, silver, and zinc.

Cyanide – Compliance with the Federal standards would be expected because the waste streams do not contain cyanide.

Toxic Organics – Sampling reveals numerous toxic organics present at levels above detection but together well beneath the local limits for total toxic organics. The detected toxic organics include, acetone, chloroform, bromodichloromethane, dibromochloromethane, bromoform, 1,4-dichlorobenzene, naphthalene, p-isopropyltoluene, 1,2,4-trimethylbenzene, toluene, xylene, methyl chloride, bis(2-ethyl hexyl)phthalate, tert-butanol, and phenol. The Yuma sample maximums for total toxic organics are above detection but orders of magnitude below the Federal standards and local limits at 206 µg/l for IWD-1 and 91 µg/l for IWD-2.

Oil and Grease – There are no sample results indicating the effectiveness of oil skimming from degreasing in preventing the discharge of petroleum oil and grease to the sewers.

#### **4.4 *Flammability***

Flammability would not be expected because the best management practices successfully restrict the discharge of volatile organics to the sewers.

#### **4.5 *Local Limits for pH and Sulfides, and The National Prohibitions Against Safety Hazards and Corrosive Structural Damage***

Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected because the wastewaters discharged to the sewers are not high-strength in biodegradable organics.



## **5.0 Compliance with Federal Monitoring Requirements**

*Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).*

*Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).*

The sample record for Yuma MCAS is representative over the sampling day as well as over the six-month reporting period for the overall combined discharge against the local limits. However, the sample record does not include any results for the individual sample points for the Federally-regulated wastestreams. The NDT stations should not be effected by any significant sources of day-to-day variability beyond operability. As a result, the twice-per-year minimum would meet the Federal requirements. On the other hand, the wash racks would be expected to exhibit day-to-day variability because the water quality depends on the amount of use and the griminess of the parts. A sample record that results in more than 10 samples per year would be considered statistically representative over the reporting period, as long as the contributing discharges and the operation of treatment are proven to be essentially random. Only a minimum number of samples would be needed for the Federally-regulated pollutants not present significant amounts (*cadmium, chromium, nickel, silver, zinc, cyanide, toxic organics*). No samples are needed for the pollutants solely regulated by local limits or national prohibitions with two exceptions. The oil & grease and final pHs do need to be self-monitored.

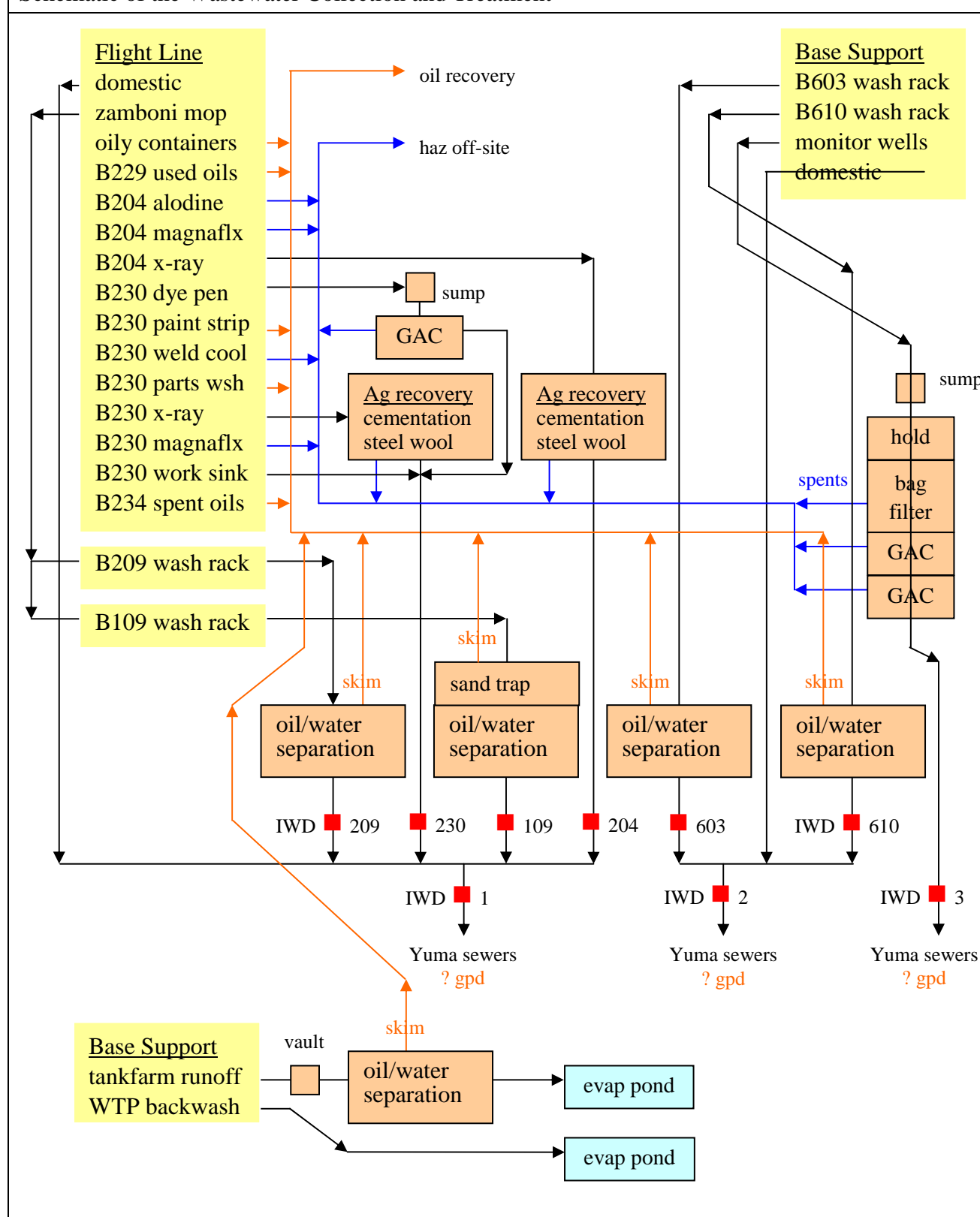
### **Requirements**

- See Appendix 2 for the expected self-monitoring requirements for the overall combined sample points of IWD-1, IWD-2, and IWD-3.
- See Appendix 2 for the expected self-monitoring requirements for the individual Federally-regulated sample points of IWD-109, IWD-204, IWD-209, and IWD-230, and for the other individual wash rack sample points of IWD-603, and IWD-610.

## Appendix 1

### Yuma Marine Corp Air Station

#### Schematic of the Wastewater Collection and Treatment



## Appendix 2

### Sewer Discharge Standards and Limits

Yuma MCAS @ IWDs-109, 204, 209, 230, 603, 610 (sources) and @ IWDs-1, 2, 3 (overall)

pollutants of concern (mg/l)	expected upon revision of the Yuma industrial users permit						
	@ IWD-109, 204, 209, 230			@ IWD-1, 2, 3, 603, 610			
	Federal standards (d-max) (mo-avg)		monitoring frequency	②Yuma local limits/proposed		monitoring frequency @ IWD- 1, 2, 3 @ IWD- 603, 610	
ammonia	-	-	-	-	350	④	-
antimony	-	-	-	-	0.11	④	-
arsenic	-	-	-	0.5	0.087	④	-
beryllium	-	-	-	-	0.028	④	-
boron	-	-	-	-	4.5	④	-
cadmium	0.69	0.26	2/year	0.1	0.050	1/quarter	-
chromium	2.77	1.71	2/year	2.08	2.3	1/quarter	-
hex chromium	-	-	-	-	0.063	④	-
copper	3.38	2.07	1/month	0.62	3.4	1/quarter	-
lead	0.69	0.43	1/month	2.33	0.084	1/quarter	-
mercury	-	-	-	0.14	0.0001	1/quarter	-
molybdenum	-	-	-	-	0.38	1/quarter	-
nickel	3.98	2.38	2/year	1.22	0.54	1/quarter	-
selenium	-	-	-	-	0.0093	④	-
silver	0.43	0.24	2/year	0.38	0.25	1/quarter	-
thallium	-	-	-	-	0.045	④	-
zinc	2.61	1.48	2/year	-	0.59	1/quarter	-
total cyanide	1.20	0.65	2/year	0.34	0.065	④	-
amenable cyanide	0.86	0.32	-	-	-	-	-
total toxic organics	2.13	-	2/year ③	2.13	2.13	1/quarter	-
phenolics	-	-	-	0.46	-	④	-
phosphorus	-	-	-	0.01	66.0	1/quarter	-
total sulfides	-	-	-	-	0.14	1/quarter	-
oil & grease – total	-	-	1/month	100.0	300.0	1/quarter	1/month
BOD	-	-	-	-	-	1/quarter	-
TSS	-	-	-	-	-	1/quarter	-
flow (gpd)	-	-	1/month	-	-	continuous	1/month
pH (s.u.)	-	-	1/month	5.0 to 11.0		1/quarter	1/month
explosivity	-	-	-	<140°F ①		1/quarter	-

① Closed-cup flashpoint.

② Yuma local limits only apply to IWD-1, IWD-2, and IWD-3.

③ Toxic organics management plans allow certifications in lieu of twice-per-year self-monitoring.

④ As part of periodic priority pollutant scans in order to identify changes in discharge quality.